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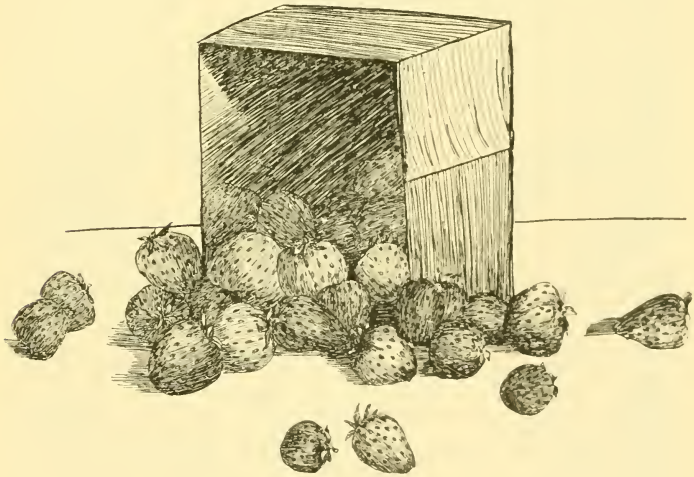
Bulletin 74 April, 1900

NEW HAMPSHIRE COLLEGE
AGRICULTURAL EXPERIMENT STATION

GROWING STRAWBERRIES IN NEW ENGLAND



BY F. WM. RANE

NEW HAMPSHIRE COLLEGE
OF
AGRICULTURE AND THE MECHANIC ARTS
DURHAM

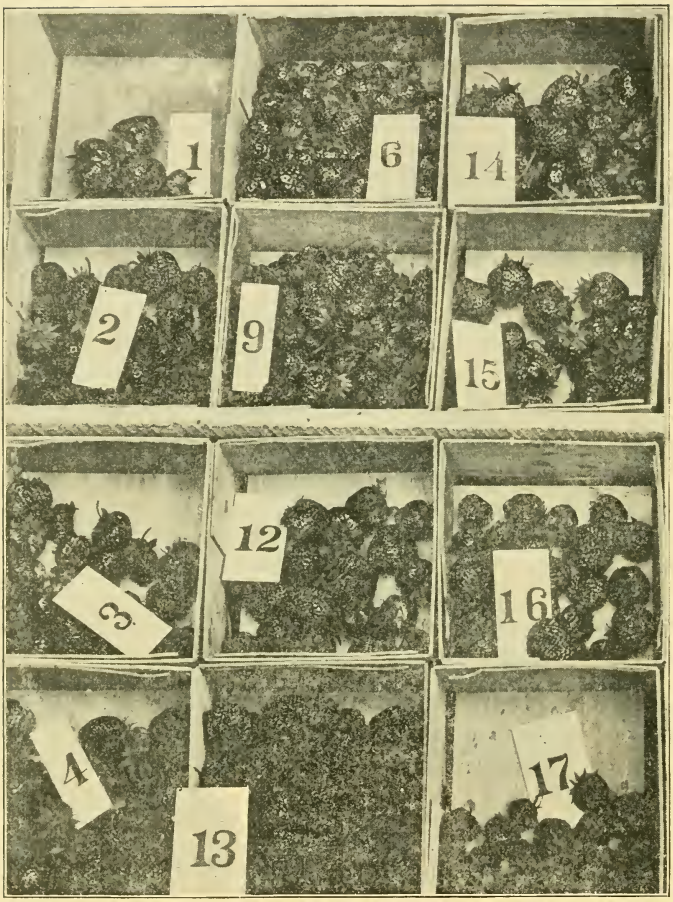


FIG. 30.—Varieties of Strawberries.

1. Bubach.
2. Crescent.
3. Greenville.
4. Lovett.
6. Warfield.
9. Cyclone.
12. Barton's Eclipse.
13. Beverly.
14. Bisel.
15. Saunders.
16. Splendid.
17. Berlin.

EXPERIMENTS WITH STRAWBERRIES

Second Report

BY FRANK WM. RANE

Everybody can have strawberries if they care for them. There is no crop of the garden that can be more easily raised, and that is so generally appreciated. This fruit is being grown more and more in the private garden than in former years. The first report sent out from this station on strawberries was in October, 1897, Bulletin 47, and the issue was exhausted immediately. In order to comply with frequent requests this, the second report, is now offered, and it includes in addition to the results of the tests of new varieties a reprint of the cultural notes as given in Bulletin 47.

This bulletin is treated under the following general headings:

I. Cultural Notes.
II. Variety Test Season, 1899.
III. Descriptive Notes on Popular Varieties.
IV. Descriptive Notes on the Newer Varieties.
V. Summary.

I. CULTURAL NOTES.

The same general principles hold true in strawberry culture, whether grown for home use or the market.

Soil and Fertilizer.—Strawberries do well on almost any well-drained soil, reasonably fertile and at a fair elevation. A friable clay loam gives the best results if properly managed. Fall plowing, together with a liberal application of fertilizer and thorough cultivation, ensures a greater degree of success. There is little danger of making the soil too rich, the only precaution being an understanding of the action of the commercial fertilizers, as there are possibilities of injury

when used in large quantities close to the plant. A thoroughly well-rotted manure is an ideal fertilizer, but where the soil contains plenty of humus, as in the average garden, wood ashes and ground bone give good results. Where wood ashes are not to be depended upon, sulphate or muriate of potash will do as a substitute, using a proportionately less amount (ordinarily one-tenth as much). The soil having thus been plowed and mulched, it is left in this condition until spring. The next step is to fit the land to receive the plants, which is done with the cultivator, harrow, and roller.

This plan is the one we practise at the station. Strawberries, however, are often planted at other seasons of the year, August being considered by some the best month. What has been said of the proper conditions of soil for the spring planting applies equally well here. The soil should be in condition to receive the plants early to ensure success. A good plan is to use the land from which some hoed crop has been taken. The soil is then in a fine degree of tilth. The white grub (*Lachnosterna fusca*) and a few other insects are so frequently troublesome where strawberries follow sod that few people ever practice it. The crop is usually preceded by some cultivated crop such as corn, thus eliminating the trouble from both insects and weeds. A crop of clover or other green manure known to be free from these troubles will, when plowed under, prove of great value to the crop. Coarse manure also may be turned under with good results, provided it is applied early enough to be well decomposed and mixed with the soil by planting time. The objection to manure on account of its contamination with weed seeds is easily overcome by better cultivation and preparation before planting.

Commercial fertilizers are commonly used for strawberries. Where the crop is grown in the rich garden soil, the results are quite marked; but where grown on a field scale, they are not as valuable as good barnyard manures. No rule can be given for the proper application of fertilizer per acre for successful strawberry growing. Every soil is necessarily different from every other as regards physical, mechanical, and chemical properties. From study of the soil in question it is thought that with the aid of the following table one can judge from previous experience as to what should be considered a liberal application.

The New York station recommends the following table of fertilizers for the strawberry.*

For nitrogen.	(1). 150 to 300 lbs. nitrate of soda, applied during the growing season; or (2). 125 to 250 lbs. sulphate of ammonia; or (3). 250 to 500 lbs. dried blood.
Phosphoric acid.	(1). 550 to 1100 lbs. bone meal; or (2). 375 to 750 lbs. dissolved bone, etc.; or (3). 450 to 900 lbs. dissolved rock.
Potash.	(1). 140 to 280 lbs. muriate; or (2). 140 to 280 lbs. sulphate; or (3). 550 to 1100 lbs. kainit; or (4). 1400 to 2800 lbs. wood ashes.

*New York Agricultural Experiment Station, Bulletin No. 94, New Series.

Setting Plants.—The best time for setting the plants, as stated, is in the early spring. By so doing the plants become thoroughly established, and if given proper cultivation and training usually ensure a maximum crop the following season. On the other hand, plants started in pots in the spring are often set out in late summer or early fall. Although this latter system is quite a popular one, only from one-third to one-half the crop is obtained the first season. Its advocates, however, show that by so doing, a previous hoed crop may be obtained. Pot-grown plants cost more than the ordinary field-grown.

No plant needs more care in transplanting. The crown should be on a level with the soil, no lower, no higher; the roots should not be allowed to get dry. Dip them in water when they begin to get dry. Trim the roots back at least one-third and spread them fan shape when setting, filling in gradually; firm well.

Distance apart to set plants depends upon how they are to be trained.—There are two methods of setting out strawberry plants commonly practised, each of which depends upon the proposed system of training. These are (*a*) Hill culture, which, as the term implies, consists in growing each plant by itself in a hill, not allowing the runners to grow or flowers to set the first season. This causes each plant to become stalwart and large, and where properly grown are very productive the following year. The plants are usually set in rows three feet apart and one foot apart in the row. This method is little used by commercial growers on account of its requiring too much time to keep off the runners. Where one has a small garden and desires to make a fine display, hill culture will prove of value.

(*b*) Matted rows. This is the method commonly used by commercial growers. The plants are set in rows varying from three to four feet apart, and from fifteen to eighteen inches apart in the row. When the runners start they are either placed or allowed to run at will. When well set they form a continuous matted row. The grower can suit himself as to just how wide the row should be, and train accordingly. After having blocked out the row, cut off the runners to keep them within bounds. When the row is about twelve inches wide, it is termed the Narrow Matted Row, and when about double that width, the Wide Matted Row. To get the finest berries the runners should be thinned out at some time during the season. It is a good practice to do this after the rows are formed, for fear that drouth, insects, etc., may assist. Where plants are fall set, comparatively few runners form. The plants should not set any fruit the season they are transplanted, which is prevented by picking the flower clusters.

Bearing Period.—Just how long a bed should be kept in bearing seems to be a disputed question. Commercial growers are generally agreed that, from the dollar and cent standpoint, more is made from the fruit of the first season than any other. It is larger, plants are less troubled with insect enemies and diseases, and it costs less to plant a new than clean out an old bed. While this is generally advocated, it is not universally followed, as many growers hesitate before

FIG. 31.—Varieties of Strawberries.

20. Enormous.
21. Fountain.
22. Gardner.
23. Homestead.
25. Beede, No. 1.
26. Tubbs.
27. World's Champion.
28. Wm. Belt.
29. Clyde.
30. Enhance.
31. Haverland.
33. Ivanhoe.

turning under a patch that looks well, and promises fair returns for a second crop. That the fruit of the second season is earlier has been proved, also that the varieties fruit more readily; but because of their inferiority in size are less profitable.

The variety has a marked influence upon this question; in fact, if some were not grown for two years, they would be discarded without a fair trial. But with the majority, where the berry is only of medium size the first season, as is the case with many of our market varieties, it naturally follows that they will be inferior the second year. Another reason for fruiting the second and third seasons is to ensure a crop, as some years plants do not set new runners abundantly.

Where the bed is retained, it is necessary to clean out the rows as soon as the last fruit is gathered, properly cultivating the intervening soil. Some practice burning over the plantation before cultivation. To do this mow off the tops of the plants and burn. Rust, insects, and old mulch are thereby destroyed. This is done as early as possible to give the plants an opportunity to form new leaves and fit themselves for winter. While this method is often successful, more experience is required to manage the plants than with the renewal system.

Mulching.—It is necessary to protect strawberry plants with some material during the winter to prevent trouble from freezing and thawing. The plants are perfectly hardy, and capable of withstanding freezing, but some soils are liable to heave; and the mulch remedies this. It serves not only to prevent heaving, but in fruiting time to keep the berries clean, and to conserve moisture. It is usually applied as soon as the ground freezes sufficiently to bear up a wagon and team. The material varies in different places, that most easily obtained at a minimum price ordinarily being used. Coarse manure, marsh hay, pine needles, pine boughs, clean wheat straw, leaves, where held in place with some other material, etc., are the most common. Just what to recommend is a question, depending upon the nature of the soil, etc. Always avoid a mulch containing weed seeds, as it often costs as much to clean out the weeds as it would to purchase the more expensive material. In the spring the mulch may be left between the rows or drawn off, giving an opportunity for cultivation. Ordinarily, however, experience would say not to remove it, as it serves to retain moisture.

Perfect and Imperfect Flowers.—It is a matter of importance that all strawberry growers know the difference between these two classes of flowers. The perfect or bi-sexual blossoms contain stamens or male organs and pistils or female organs. The imperfect or pistillate blossoms contain pistils only. It is necessary to know, before transplanting, what varieties are pistillate, in order to plant perfect flowering sorts near enough to ensure fertilization. One row in every two to four of the pistillate sorts is sufficient. The pistillate varieties usually yield more heavily than other varieties when well fertilized.

II. VARIETY TEST, SEASON OF 1899.

The season of 1899 was an extremely dry one, and unless it was possible to irrigate, or the soil was of such a nature that it retained moisture, the crop was much lessened. Not only was the crop cut short, but the season was an exceptionally hard one in which to establish new plantations, and therefore a lack of fruit is liable to be felt the coming season.

The following table points out in detail the comparative merits of each of the varieties tested on our grounds during the season. The abbreviations are as follows: In column *Amount of bloom*: L=light; M=medium; H=heavy; V=very.

Column *Yield*: S=small; M=medium; G=good. Column *Row Matted or Not*: M=matted; L M=loosely matted; T M=thickly matted.

TABLE I—TABULATED COMPARATIVE NOTES OF VARIETIES, 1899.

Number.	Variety.	First bloom.	Amount of bloom.	First ripe fruit.	First picking.	Yield.	Row matted or not.	Withstood drouth.
1	Bubach	May 27	L.	June 17	June 19	G.	Not.	Fairly well.
2	Crescent	" 25	H.	" 14	" 17	V. G.	M.	Well.
3	Greenville	" 20	H.	" 16	" 19	V. G.	L. M.	Well.
4	Lovett	" 20	H.	" 16	" 19	M.	Not.	Poorly.
5	Parker Earl	" 25	M.	" 14	" 19	M.	Not.	Poorly.
6	Warfield	" 20	V. H.	" 14	" 19	G.	M.	Well.
7	Brandywine	" 25	H.	" 19	" 21	M.	W. M.	Poorly.
8	Burnett	" 26	L.	" 20	" 23	S.	M.	Very poorly.
9	Cyclone	" 24	V. H.	" 19	" 22	M.	M.	Very poorly.
10	Leviathan	" 25	H.	" 19	" 22	M.	M.	Poorly.
11	Marshall	" 25	M.	" 19	" 20	S.	M.	Very poorly.
12	Barton's Eclipse	" 26	H.	" 19	" 20	M.	T. M.	Poorly.
13	Beverly	" 26	M.	" 19	" 20	M.	T. M.	Poorly.
14	Bisel	" 26	H.	" 22	" 24	G.	M.	Well.
15	Saunders	" 24	M.	" 19	" 20	M.	T. M.	Well.
16	Splendid	" 20	H.	" 16	" 19	M.	M.	Well.
17	Berlin	" 22	M.	" 13	" 17	M.	L. M.	Well.
18	Champion of England	" 27	L.	" 20	" 23	M.	L. M.	Well.
19	Eleanor	" 20	M.	" 17	" 19	M.	Not.	Well.
20	Enormous	" 26	L.	" 17	" 19	M.	L. M.	Fairly well.
21	Fountain	" 27	H.	" 17	" 20	G.	M.	Fairly well.
22	Gardner	" 23	H.	" 16	" 19	S.	M.	Poorly.
23	Homestead	" 26	V. L.	" 19	" 20	M.	Not.	Very poorly.
24	Mineola	" 27	L.	" 17	" 19	S.	T. M.	Very poorly.
25	Beede, No. 1	" 26	M.	" 20	" 23	S.	L. M.	Very poorly.
26	Tubbs	" 27	H.	" 17	" 19	S.	L. M.	Very poorly.
27	World's Champion	" 20	M.	" 19	" 23	G.	M.	Fairly well.
28	Wm. Belt	" 26	M.	" 19	" 20	V. G.	M.	Very well.

TABLE I—*Continued.*

Number.	Variety.	First bloom.	Amount of bloom.	First ripe fruit.	First picking.	Yield.	Row matted or not.	Withstood drouth.
29	Clyde	May 20	V. H.	June 16	June 19	V. G.	T. M.	Very well.
30	Enhance	" 20	H.	" 19	" 20	G.	M.	Well.
31	Haverland	" 27	H.	" 19	" 23	G.	L. M.	Well.
32	Muskingham	" 20	V. L.	" 17	" 20	M.	Not.	Well.
33	Ivanhoe	" 27	L.	" 14	" 17	M.	L. M.	Well.
34	Leader	" 24	H.	" 16	" 19	G.	T. M.	Well.
35	Princess	" 24	H.	" 19	" 23	M.	L. M.	Poorly.
36	Princeton Chief	" 26	M.	" 17	" 20	G.	M.	Well.
37	Wolverton	" 27	H.	" 20	" 23	M.	M.	Very poorly.
38	Timbrell	" 28	M.	" 20	" 23	M.	T. M.	Very poorly.
39	Rio	" 27	H.	" 20	" 23	V. S.	T. M.	Dried up.
40	Columbian	" 26	H.	" 19	" 23	S.	T. M.	Very poorly.
41	Holland	" 25	L.	" 19	" 20	M.	T. M.	Well.
42	Lady Thompson	" 27	M.	" 13	" 17	M.	L. M.	Fairly well.
43	Paris King	" 23	H.	" 17	" 19	M.	T. M.	Fairly well.
44	Wilson	" 25	V. H.	" 17	" 20	G.	T. M.	Well.
45	Annie Laurie	" 27	M.	" 17	" 20	G.	Not.	Well.
46	Bouncer	" 20	M.	" 17	" 20	M.	T. M.	Well.
47	Glen Mary	" 27	M.	" 19	" 20	G.	T. M.	Well.
48	Brook's Seedling	" 20	H.	" 17	" 20	G.	T. M.	Well.
49	Gandy	" 25	V. H.	" 22	" 26	V. G.	M.	Very well.
50	Jersey Queen	" 29	L.	" 20	" 23	M.	Not.	Poorly.
51	Cumberland	" 28	H.	" 20	" 22	V. G.	T. M.	Well.
52	Jewel	" 20	V. H.	" 20	" 22	M.	M.	Poorly.
53	Jessie	" 24	H.	" 13	" 19	M.	M.	Well.
54	Fremont	" 24	H.	" 16	" 19	M.	M.	Poorly.
55	Sample	" 24	M.	" 20	" 22	V. G.	M.	Very well.
56	Hunn	" 29	V. L.	" 26	" 30	V. S.	Not.	Well.
57	Cobden Golden	" 27	M.	" 19	" 22	M.	L. M.	Well.
58	Edgar Queen	" 24	M.	" 17	" 20	V. G.	M.	Well.
59	Pride of Cumberland.	" 25	H.	" 17	" 22	M.	M.	Fairly well.
60	Manuel	" 26	H.	" 19	" 22	M.	Not.	Fairly well.
61	Jersey Market	" 20	L.	" 19	" 20	V. G.	T. M.	Very well.
62	Morgan's Favorite	" 24	M.	" 17	" 20	V. G.	T. M.	Well.
63	Darling	" 25	M.	" 17	" 21	S.	T. M.	Fairly well.
64	Evans	" 25	L.	" 16	" 20	M.	L. M.	Fairly well.
65	Bismark	" 26	M.	" 17	" 20	G.	M.	Fairly well.
66	Mell	" 24	H.	" 17	" 20	V. G.	W. M.	Well.
67	Mary	" 28	H.	" 22	" 24	V. G	Not.	Well.
68	Clarence	" 20	M.	" 17	" 19	V. G.	Not.	Well.
69	Earliest	" 18	H.	" 13	" 17	M.	T. M.	Well.
70	Howell's Seedling	" 26	V. L.	" 22	" 24	V. S.	Not.	Well.
71	Giant	" 27	L.	" 14	" 19	M.	Not.	Well.
72	Magoon	" 23	M.	" 19	" 22	M.	L. M.	Well.
73	Ruby	" 25	H.	" 20	" 23	V. G.	M.	Well.
74	Plow City	" 26	H.	" 19	" 20	M.	L. M.	Well.
75	Margaret	" 23	M.	" 21	" 23	V. G.	L. M.	Very well.
76	Carrie	" 20	V. L.	" 19	" 22	G.	L. M.	Well.
77	Roser's Seedling	" 27	M.	" 17	" 20	M.	M.	Fairly well.
78	Beede, No. 10	" 26	V. H.	" 19	" 20	M.	M.	Well.
79	McKinley	" 24	V. H.	" 19	" 20	M.	M.	Fairly well.
80	Gulick, No. 8	" 25	L.	" 22	" 24	M.	L. M.	Fairly well.
81	Hall's Favorite	" 25	H.	" 17	" 19	M.	L. M.	Fairly well.
82	Ridgeway	" 26	V. H.	" 20	" 22	M.	T. M.	Fairly well.
83	Starr	" 27	V. H.	" 20	" 22	M.	W. M.	Fairly well.
84	Seaford	" 26	H.	" 19	" 20	M.	L. M.	Well.
85	Nick Ohmer	" 25	M.	" 20	" 22	V. G.	M.	Well.
86	Gulick, No. 7	" 27	V. H.	" 22	" 23	V. G.	T. M.	Very well.

III. DESCRIPTIVE NOTES ON POPULAR VARIETIES

Beverly (perfect flower).—Medium to large fruit, of good form and color. Plant vigorous, heavy foliage, and sets many runners. The berries are large at the beginning of the season, but do not seem to hold out well. This variety is very well known by all growers in the state.

FIG. 32.—Varieties of Strawberries.

5. Parker Earle.
7. Brandywine.
8. Brunette.
9. Cyclone.
10. Leviathan.
11. Marshall.
18. Champion of England.
24. Mineola.
34. Leader.
35. Princess.
36. Princeton Chief.
37. Woolverton.

Brandywine.—This is a perfect flowering variety, which seems to be gaining favor wherever it has been thoroughly tried. On our grounds it has proved to be one of the best medium to late sorts. The general opinion of growers is that although it does not excel in productiveness, its other good qualities make it valuable. While it does not yield as heavily as some of the medium early varieties, it equals the late sorts, and surpasses most varieties in size, color, and general appearance. The plants are very vigorous, large, set plenty of

FIG. 33.—Varieties of Strawberries.

38. Timbrell.
39. Rio.
40. Columbian.
41. Holland.
42. Lady Thompson.
43. Paris King.
46. Bouncer.
47. Glen Mary.
48. Brook's Seedling.
49. Gandy.
50. Jersey Queen.
51. Cumberland.
52. Jewel.
53. Jessie.
54. Fremont.
19. Eleanor.

runners, and fruit freely. The berries are very large, and of regular, broad conical form; bright glossy red in color, which extends to the centre; flesh firm and excellent in quality. The fact that it is a perfect flowering variety, together with the other good qualities named, gives it a prestige which renders it worthy of a general trial.

Bubach (pistillate).—This variety is considered very valuable, and is commonly grown. The objection to it is that it sets few plants. Where given the best of attention it responds liberally. It is well adapted to hill culture. The berry is large, broad conical, and sometimes flattened in form; color scarlet, fair quality, season medium.

Clyde (perfect).—A fine variety. Plants vigorous; berries medium to large, fairly firm, good quality; form, conical, regular, uniform; color, light scarlet with a whitish centre. Leaf medium; sets many runners, makes a well-formed, matted row, and is little troubled with blight. Foliage stands erect; berries are about the right size, maintaining it throughout the season. The only drawback to the variety is on account of color and perhaps firmness. It deserves a trial.

Crescent (pistillate).—An old standard variety still planted extensively. Berry small, bright scarlet, moderately firm, fair quality; form, conical. Ripened first on June 22d, and extended over a long season. Productive.

Greenville (pistillate).—A popular variety in this state. Berry large, dark red, medium firm, fair quality; form, broad conical. Medium leaf, loosely-matted row, little blight, season second early.

Haverland (pistillate).—An old variety still commonly grown, but discarded by many on account of softness. Good for a market near at hand. Plants were medium size and formed a loosely-matted row; leaf medium, dark green, with long stems; berry, large, long conical. It was productive and healthy during the past season.

Lovett (perfect flower).—A variety grown by most growers, and valuable as a fertilizer of such varieties as Crescent and Haverland. Berry large, firm, good quality; form, long conical; color, bright red. Plants strong, healthy, and productive.

Runners comparatively few during the past season, leaf medium, very little blight.

Marshall (perfect).—This variety has shown itself to be hardy, vigorous, and fairly productive. Berry, large to very large, medium firmness, high quality; form, rather irregular; color, deep red. A very desirable amateur variety. It lacks in texture and productiveness, causing many to discard it. For a fancy trade it is well worthy of consideration.

Warfield (pistillate).—A popular variety in the state. Has a comparatively long fruiting season, makes numerous runners which need thinning, and requires plenty of moisture to get best results. Berry medium to large, firm, good quality; form, conical; color, crimson. Generally liked.

IV. DESCRIPTIVE NOTES ON NEWER VARIETIES

55. *Sample* (pistillate).—Origin, J. D. Gowing, Reading, Mass. Introduced by Charles S. Pratt, Reading, Mass. Claimed to be a seedling of Leader. Plant very vigorous, makes plenty of runners which root readily, well distributed, thrifty, good color, and matted. Berry very large, even, "broad obtuse wedge form," bright scarlet color, moderately firm, and very good quality. It withstood drouth very well. Very worthy.

57. *Cobden Queen* (pistillate).—Origin, J. McCaffrey, Illinois. Plants very thickly matted, vines resemble Brandywine. Leaves large and dark green. Berry medium to large, smooth and round, rather flat; crimson color inside and out; very good quality.

58. *Edgar Queen* (pistillate).—Origin, Edgar Co., Illinois. Plants thrifty, matted. Leaves dark green. Sends out a good supply of runners. Berries large, a little irregular, mostly round with depression at tip; crimson color; good quality.

59. *Pride of Cumberland* (S).—Berry large, running to small. Shape quite regular, obtuse, conical. Color dark, rich, and attractive. Quality very good, a little tart. Many berries set that did not develop, partially or wholly caused by drouth. Plants strong, upright. Foliage heavy; leaves medium green. Origin, W. S. Gandy, Cumberland Co., N. J.

61. *Jersey Market* (S).—Size medium to large. Shape quite regular, roundish, conical. Color dark crimson, glossy. Quality very good. Berries hang close to ground, thus liable to rot in damp weather; stood drouth very well. Vines very thrifty. Leaves large and dark, heavy matted row. Origin, New Jersey.

62. *Morgan's Favorite* (S).—Size large. Shape quite regular, somewhat broad conical. Color medium. Quality fairly good. Flavor sprightly. Quite a good variety. Plants large and healthy, matted row. Leaves large and dark. Berries borne high up. Runners did not catch well in places.

63. *Darling* (S).—Size small. Shape regular, with a short neck. Color light. Quality very good, mild. A home market berry, too soft for shipping. Seedling of Mitchel's Early. Origin, M. T. Thompson, Rio Vista, Va. Plant growth very heavy, leaves borne on long stems. Leaves small but numerous and rather light in color. A rapid grower, spreading quickly.

64. *Evans* (S).—Size large, shape slightly irregular, mostly round with indented end. Color rather light. Quality quite good, a little tart. Stood drouth fairly well. Vines quite thrifty, a little scattering. Leaves dark and healthy. Origin, G. R. Evans, Maryland.

65. *Bismark* (S).—Size medium, bordering on small. Shape quite regular, long, broad conical. Bright scarlet color; dark when fully ripened. Quality very good. Stood drouth quite well. Vines quite large and thrifty, fairly good stand, leaves dark. Origin, J. C. Bauer, Judsonia, Ark.

66. *Mell* (P).—Size small. Shape very regular, slightly conical. Color dark, very good. Quality fairly good, a little tart. If grown on very rich land might give good results. Stood drouth well. Plants rather small. Leaves very small, thinly matted. Crescent type. Origin, A. H. Griesa, Kansas.

67. *Mary* (P).—Size very large. Shape quite irregular, double, especially the larger ones. Color light, glossy red, slow to color up. Quality fairly good, a little tart. A good late variety, one of the largest. July 6, a large number of large, well-ripened berries on plants now. Vines very large,

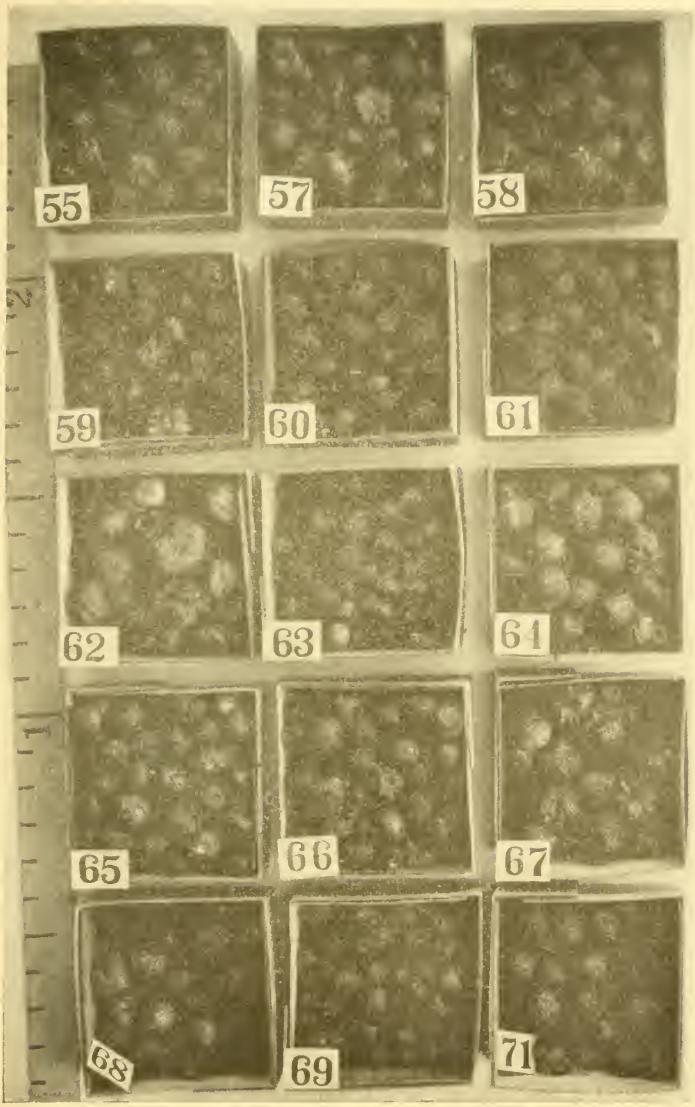


FIG. 34.—Varieties of Strawberries.

55. Sample.
57. Cobden Golden.
58. Edgar Queen.
59. Pride of Cumberland.
60. Manuel.
61. Jersey Market.
62. Morgan's Favorite.
63. Darling.
64. Evans.
65. Bismark.
66. Mell.
67. Mary.
68. Clarence.
69. Earliest.
71. Giant.

not much matted. Leaves medium dark. Origin, New Jersey. Introduced by J. T. Lovett & Co.

68. *Clarence* (S).—Size medium. Shape regular, somewhat elongated, having a neck. Color dark, glossy. Quality excellent. Plants not very thrifty, poorly matted. Leaves medium in size and color. Origin, M. T. Thompson, Rio Vista, Va.

69. *Earliest* (S).—Size small. Shape regular, with neck. Color dark. Quality very good. True to name, was the earliest here this year, but did not give large yield. Plants, thickly matted row, leaves borne on very long stems. Leaves small and light colored, resembling Darling. Origin, M. T. Thompson, Rio Vista, Va.

71. *Giant* (S).—Size large. Shape very regular, round, and good. Color dark, well colored through berry. Quality quite good. Stood drouth well, held out late. Vines large and thrifty, not matted row. Leaves medium dark. Plants resemble Mary. Origin, Joseph Bailey, on the Hudson, N. Y.

72. *Magoon* (S).—Size medium. Shape regular, slightly conical. Color dark when fully ripe. Quality very good. Our plants were not very thick, perhaps would make a better showing if thicker. Few and small leaves. Runners quite well caught and medium in color. Introduced by Ellwanger and Barry.

73. *Ruby* (S).—Size medium to large. Shape a little irregular, some conical, some flattened at tip. Color dark purple, glossy. Quality very good. Did very well this year. Plants' growth good. Runners caught very well. Leaves near ground and rather small, medium color. Origin, E. A. Riehl, Alton, Ill.

74. *Plow City* (S).—Size medium. Shape very regular, conical. Color dark red throughout berry. Quality very good, berry firm. If plants were better would be a fairly good variety. Vines very scattering, very loosely matted. Origin, C. C. Stone, Moline, Ill.

75. *Margaret* (S).—Size medium. Shape quite regular. Color glossy red. Quality very good. Quite a promising late variety. Plants very little matted, but healthy. Leaves medium in size and color. Good looking plants. Origin, John F. Beaver, Dayton, O. Introduced by M. Crawford, Ohio.

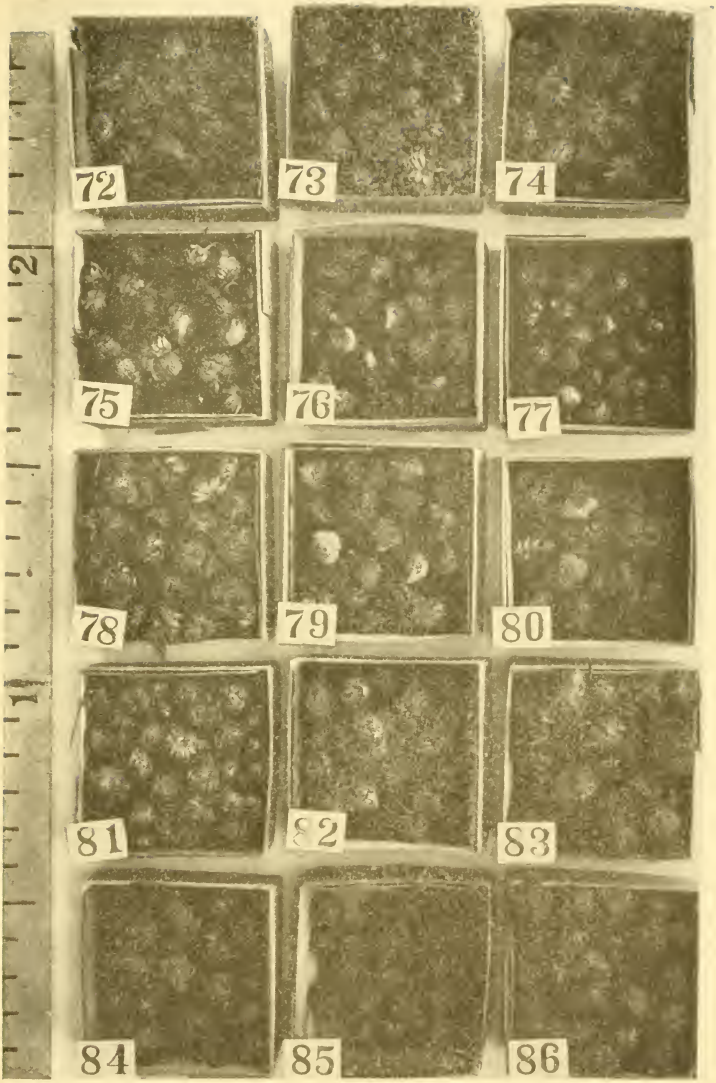


FIG. 35.—Varieties of Strawberries.

72. Magoon.
73. Ruby.
74. Plow City.
75. Margaret.
76. Carrie.
77. Roser's Seedling.
78. Beede, No. 10.
79. McKinley.
80. Gulick, No. 8.
81. Hall's Favorite.
82. Ridgeway.
83. Starr.
84. Seaford.
85. Nick Ohmer.
86. Gulick, No. 7

76. *Carrie* (P).—Size large. Shape long, conical, somewhat irregular but not illshapen. Color scarlet, glossy. Quality very good, mild, and sweet. Would yield fairly well with better growth of vines. Plants thrifty when caught well. Leaves large and mostly dark, some light. Runners not abundant, not very much matted. Origin, M. T. Thompson, Rio Vista, Va.

77. *Roser's Seedling* (S).—Large, bright scarlet, round, good quality. Plant fairly vigorous and productive. Origin, E. L. Roser, Brittain, O. Not yet introduced.

78. *Beede, No. 10.*—Large, bright scarlet, conical, good quality. Plant medium size, fairly vigorous, plenty of runners, prolific. Origin, G. F. Beede, Fremont, N. H. Not yet introduced.

79. *McKinley* (S).—Size medium to large. Shape regular; color medium to dark glossy. Quality fairly good. Many set but did not develop nearly all, perhaps due to dry weather. Vines quite thrifty, loosely matted; leaves medium in size and color. Introduced by Ellwanger and Barry, Rochester, N. Y.

80. *Gulick, No. 8* (S).—Large, obtuse conical, bright crimson, best quality. Plant vigorous and productive. For these two varieties origin, Robert Gulick, Linkwood, Md. Not yet introduced.

81. *Hall's Favorite* (S).—Size medium to small. Shape regular. Color crimson. Very good. Did not do well. Plants rather small and thin on ground; leaves small and medium in color; loosely matted. Origin, J. W. Hall, Marion, Md.

82. *Ridgeway* (S).—Size medium. Shape very good, smooth, round. Color glossy crimson. Quality very fine when fully ripened. A great many set that did not develop. A long fruiting period. July 6, quite a good picking on vines and many green berries yet. Plants' growth quite good, leaves rather large, medium color; plants a little thick in places. Origin, M. H. Ridgeway, Wabash, Ind.

83. *Star* (S).—Size large. Shape very regular, smooth, quite attractive. Color medium; well colored throughout. Quality very good, mild and sweet. A very attractive berry;

one of the best this year. Vines quite thrifty; leaves light green; widely matted. Introduced by E. W. Reid, Bridgeport, O.

84. *Seaford* (S).—Size medium. Shape regular, broad, obtuse, conical. Color dark when fully ripe. Quality very good. Stood drouth well. Plants not very abundant; loosely matted; leaves rather light. Origin, Delaware.

85. *Nick Ohmer* (S).—Size medium to large. Shape quite regular; roundish, not much tipped. Color dark, glossy. Quality, if fully ripened, very good; otherwise somewhat tart. Holds on well. Many green berries on vines 4th of July. Plants thrifty, scattered about right; leaves rather large and light colored; a very good plant. Origin, J. F. Beaver, Dayton, O. Introduced by M. Crawford, Ohio.

86. *Gulick, No. 7* (S).—Size medium. Shape somewhat rounded; slightly indented at blossom end; color medium; quality quite good. A large per cent. of the blossoms never developed, perhaps due to dry season. Plant growth very heavy; leaves rather small and dark; a little too thick for good fruiting. Not yet introduced. Origin, Robert Gulick, Linkwood, Md. Promising.

V. SUMMARY.

1. The culture is the same for berries both for home use and the market.

2. The strawberry does well wherever given good cultivation, proper drainage, and plenty of fertilizer in available form.

3. Well-rotted manure, bone meal, and wood ashes (or some of the potash salts), are considered the best fertilizers.

4. Fall plowing, mulching with manure and thorough preparation of soil before setting plants are the first steps in strawberry growing.

5. A crop of clover or other green manure, known to be free from insects, will when plowed under prove of great value to the crop.

6. Coarse manure may be plowed under with good results, provided it is applied early enough to be well decomposed by planting time.

7. Spring set plants give the best results; where fall set they should be grown especially for that purpose, small pots being most commonly used.

8. Where plants are grown by hill culture they are usually set in rows three or three and one-half feet apart, and one foot apart in the row; all runners and blossoms being kept off the first season.

9. In matted rows, the rows are from three and one-half to four feet apart and plants are set from fifteen to eighteen inches in the row, according to variety and width of row.

10. Fruiting one season only is usually advocated by best growers. It is less work and more profitable to set a new bed than renovate an old one.

11. It is necessary to protect the plants in winter by mulching with some material such as straw, marsh hay, pine needles, pine boughs, coarse manure, etc., to protect from heaving.

12. Failure to get a maximum crop frequently comes from improper fertilization. Have at least one row in every four, of a perfect flowering variety.

13. The practical growers generally agree upon the merits of the following varieties: Beverly, Brandywine, Bubach, Clyde, Crescent, Greenville, Haverland, Lovett, and Warfield.

14. For the value of the newer varieties consult Part IV and Table I.

15. Irrigation has proven of great value wherever tried.